

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A vertical shaft impact crusher for crushing material, said crusher ~~[[50]]~~ comprising:
 - a rotor ~~[(1)]~~ for accelerating a first flow of material ~~[(M1)]~~ to be crushed,
 - a first feed means ~~(56, 90, 96)~~ for vertically feeding the first flow of material ~~[(M1)]~~ to the rotor ~~[(1)]~~,
 - a housing ~~[(52)]~~ comprising a wall ~~[(70)]~~ with a circumferential impact wall section ~~[(76)]~~ against which the accelerated first flow of material ~~[(M1)]~~ may be crushed,
 - a second feed means ~~(54, 56, 62, 58, 66, 80, 74, 78, 82)~~ for feeding a second flow of material ~~[(M2)]~~ to be crushed into the path of the accelerated first flow of material ~~[(M1)]~~, wherein ~~characterised in that~~
 - the second feed means ~~(54, 56, 62, 58, 66, 80, 74, 78, 82)~~ comprises means ~~(66, 78, 80)~~ for forming at least one hillside ~~(108, 110)~~ on which the second flow of material ~~[(M2)]~~ may slide, the hillside ~~(108, 110)~~ having a slope being substantially tangential in relation to the rotor ~~[(1)]~~ for directing the second flow of material ~~[(M2)]~~ in a direction having a substantially tangential component in relation to the rotor ~~[(1)]~~, such that the second flow of material ~~[(M2)]~~ will have a substantially tangential component of movement in relation to the rotor ~~[(1)]~~ when reaching the path of the first flow of material ~~[(M1)]~~.

2. (Currently Amended) A crusher according to claim 1, wherein the wall ~~[[70]]~~ of the housing ~~[[52]]~~ comprises a circumferential distributing wall section ~~[[74]]~~ forming part of the second feed means ~~(54, 56, 62, 58, 66, 80, 74, 78, 82)~~ and being located above said impact wall section ~~[[76]]~~, the second feed means comprising feed hopper means ~~(54, 56, 62, 58, 66)~~ for feeding, in a first step, the second flow of material ~~[[M2]]~~ in a direction towards the distributing wall section ~~[[74]]~~, which is adapted to receive the second flow of material ~~[[M2]]~~ and to direct it against the impact wall section ~~[[76]]~~.

3. (Currently Amended) A crusher according to claim 2, wherein the feed hopper means ~~[[54]]~~ comprises an inner hopper ~~[[56]]~~ and an outer hopper ~~[[58]]~~ surrounding the inner hopper ~~[[56]]~~, said hoppers ~~(56, 58)~~ having a common vertical axis substantially coinciding with the vertical axis of the rotor ~~[[1]]~~, the inner hopper ~~[[56]]~~ being provided with at least one outlet ~~[[62]]~~ for allowing the second flow of material ~~[[M2]]~~ fed to the inner hopper ~~[[56]]~~ to enter a space ~~[[60]]~~ formed between the inner and the outer hoppers ~~(56, 58)~~, an "L"-shaped direction arm ~~[[66]]~~ being fixed in the space ~~[[60]]~~ between said hoppers ~~(56, 58)~~ just outside said outlet ~~[[62]]~~ to facilitate the building of a hillside ~~[[108]]~~ of accumulated material, the hillside ~~[[108]]~~ having a slope being tangential in relation to the rotor ~~[[1]]~~ for directing the second flow of material ~~[[M2]]~~ towards the distributing wall section ~~[[74]]~~.

4. (Currently Amended) A crusher according to claim 3, wherein a horizontal leg [(104)] of the "L"-shaped direction arm [(66)] is pointing in the rotational direction [(R)] of the rotor [(1)], such that any dust [(D)] entrained by the rotor [(1)] in a direction having an upwardly directed component and a component being tangential in relation to the rotor [(1)] will be hindered by a vertical leg [(102)] of the direction arm [(66)].

5. (Currently Amended) A crusher according to claim 3 [or 4], wherein the inner and outer hoppers ~~(56, 58)~~ have a polygonal shape as seen from above.

6. (Currently Amended) A crusher according to claim 2 ~~any one of claims 2-5~~, wherein the second feed means further comprises the upper surface [(82)] of a ring [(78)] fixed to the inner side of the wall [(70)] of said housing [(52)] to separate the distributing wall section [(74)] from the impact wall section [(76)] located below it.

7. (Currently Amended) A crusher according to claim 6, wherein the second feed means further comprises at least one vertical collection plate [(80)] extending radially with respect to the rotor [(1)], the collection plate [(80)] being fixed to the upper face [(82)] of the ring [(78)] at such a location that a part of the second flow of material [(M2)] fed towards the distributing wall section [(74)] in said first step will accumulate against the collection plate [(80)] to form a hillside [(110)] of material, the hillside [(110)] having a slope being substantially tangential in relation to the rotor [(1)] for giving the second flow of material [(M2)] a

substantially tangential component of movement in relation to the rotor [(1)] when reaching the path of the first flow of material [(M1)].

8. (Currently Amended) A method of crushing material, said method comprising the steps of

feeding a first flow of material [(M1)] to be crushed to a rotor [(1)] rotating around a vertical axis,

in said rotor, [(1)] accelerating said first flow of material towards an impact wall section [(76)] of a housing [(52)] surrounding the rotor [(1)],

feeding a second flow of material [(M2)] to be crushed into the path of the accelerated first flow of material [(M1)] wherein

~~characterised in~~

feeding the second flow of material [(M2)] in a direction having a substantially tangential component in relation to the rotor [(1)] , such that the second flow of material [(M2)] will have a substantially tangential component of movement in relation to the rotor [(1)] when reaching the path of the first flow of material [(M1)].

9. (Currently Amended) A method according to claim 8, wherein the second flow of material [(M2)] is fed into the path of the first flow of material [(M1)] adjacent to the impact wall section [(76)].

10. (Currently Amended) A method according to claim 8 [[or 9]], wherein the second flow of material [(M2)] is fed from a position adjacent to the axis of the

rotor [(1)] towards a wall [(70)] of the housing [(52)] in a direction having a substantial tangential component in relation to the rotor [(1)].